MISSOURI BOTANICAL GARDEN

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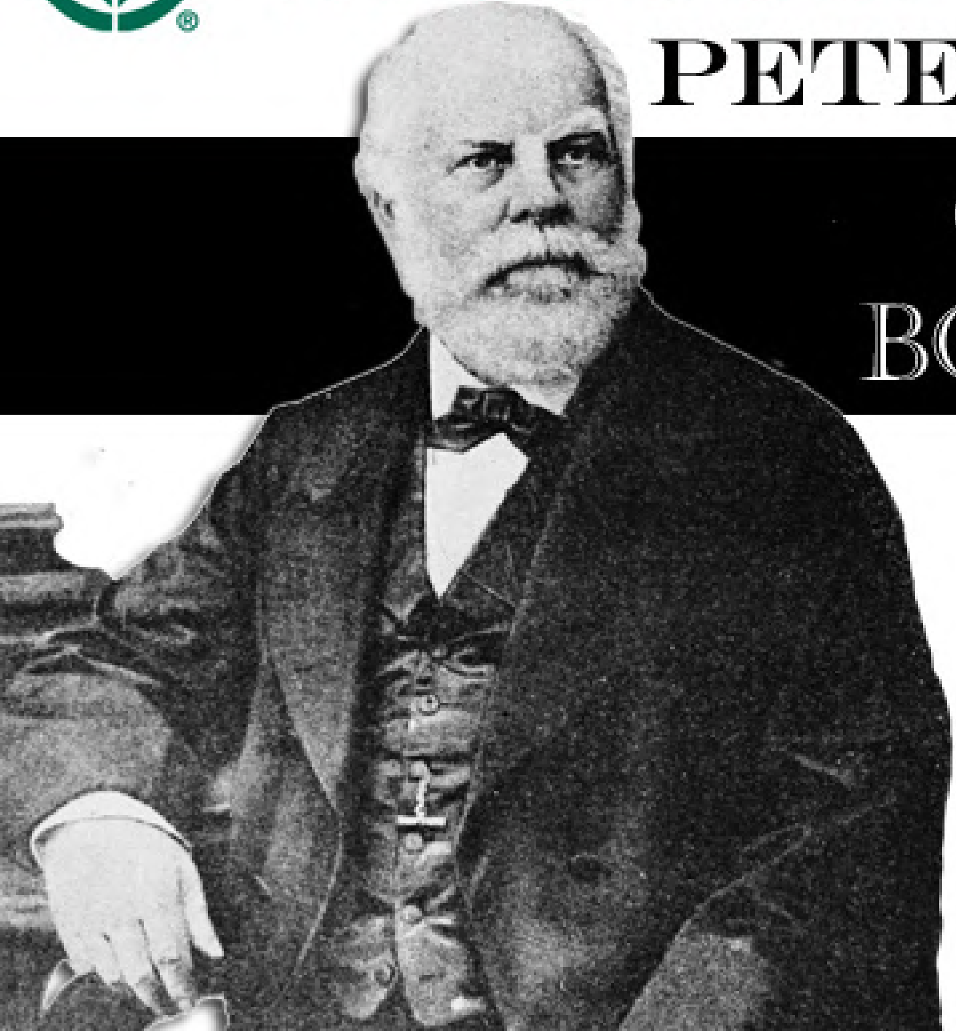
GEORGE ENGELMANN BOTANICAL NOTEBOOKS



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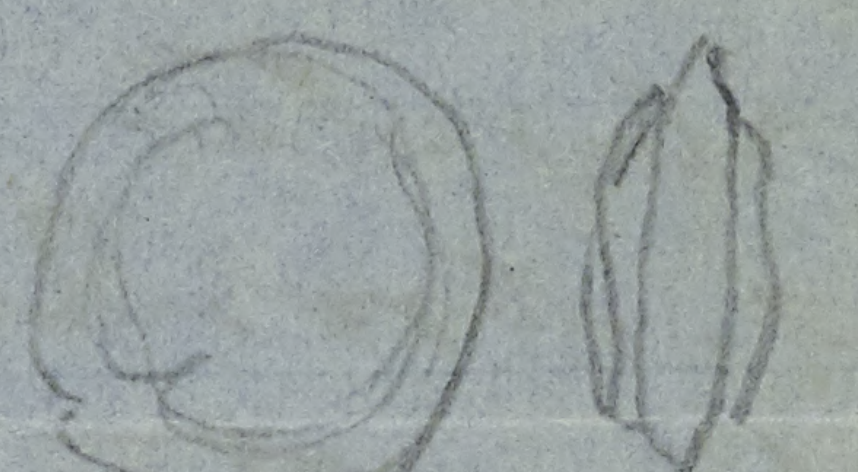
Sept 1855

Seed 2½ l. in diameter, with a rather narrow but sharp rim; quite irregular.

O. microchila articulis orbiculato-obovatis see pag 70 ~~foliis minutis, subulatis~~, aculeis exterioribus 5-10 inferioribus albidis superioribus divergentibus ~~paulo~~ robustioribus fulvidis interioribus singulis s. binis robustioribus albidis s. fuscatis patentibus; ovario globoso, stigmate 5-partito; bacca ~~breviter~~ ovata, umbilico parum depresso, areolis 20-30 setosis et ~~aculeisque~~ s. breviter aculeolatis; seminibus minoribus, subregularibus, anguste acuteque marginatis.

I have obtained this form from the neighborhood of Fort Pierre on the Missouri River in the year 1847. The plants were bearing fruit at the time I got them, and have flowered repeatedly since. The aspect of the plant is not different from the usual forms of O. Missouriensis; size of joints, shape of leaves, spines are the same; the flower only differs in the smaller number of stigmata. The 10 to 20 ~~short but stiff~~ spines on the areolae of the fruit are shorter and stiffer than usual; the seed however differs from any others I have seen of the numerous varieties of this plant; it is much smaller (only 2 l. diameter) much more regular, thicker in proportion and with a narrow and acute rim. Further careful observations must decide whether these differential characters can constitute a distinct species.



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see pag 298

Opuntia basilaris E & B. _ humilis

glauco- ~~pur~~viridibus pubescentibus adscendentibus

articulis obovatis s. subtriangularibus e basi solum proliferis pro rosulatis, ~~areolis~~ ~~immersis, subconfertis~~ foliis (minutis subulatis), pulvill areolarum fulvo tomentosis vix superantibus adpressis, subapproximatis subconfertis; setis aculeis ~~nullis~~ …… parvulis setiformibus, fuscis, caducis ~~mox evanidis~~;

rubellis

demum numerosissimis tenuissimis brevibus, fulvidis,

ovario obovato pubescente areolis plurimis ~~ab 40~~ 60 confertis ~~…~~ fulvide tomentosis stipato ‡ _ ~~bacca~~

sicca brevi, obovata ~~oblonga~~ late umbilicata; †

In great abundance on hills and in ravines from the Cactus Pass down Bill Williams Fork and west of the Colorado nearly to the Mojave Creek ♀ _ Habit very different from any other of our Opuntiae; the stout obovate or triangular-fanshaped joints originate from a common ~~center~~ base, forming a sort of a rosette ~~resembling~~ somewhat an open cabbagehead ~~the leaves of which are not closed~~. Among thousands of specimens seen none deviated from this unusual manner of growth and none were proliferous in the manner of the other elliptic Opuntiae. Joints 5-8 inches ~~long~~, 4-5 broad, sometimes as broad~~er~~ as they are long, 1/2 inch thick; ~~pubescent~~ minutely pubescent like the ~~erect~~ & (X a) O. microdasys) which is found on the Rio Grande near Eagle pass, and to which it is very closely allied. Leaves ~~the smallest in this genus~~ only ~~one line~~ long

‡ sepalis 20-25 exterioribus oblanceolatis, acuminatis interioribus late obovatis cuspidatis; petalis sub 10 ~~obovato~~- orbiculatis retusis s. obcordatis, ~~plerumque~~ saepe tenuiter aristatis; (~~purpureis~~ ~~violaceis~~ carmineis) stigmate capitato crasso sub-8 partito

† seminibus magnis crassis subregularibus ~~angustis~~ ~~marginatis~~

♀ Divide Ridge of the Californ. Mts and in the Gila valley A Schott.

X or a species nearly allied to it

common

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slender subulate, smaller than in
any other of our species (Next in size
are the leaves of O. missouriensis
O. fragilis and O. purpurascens; some of
our cylindric Opuntiae bear the largest
leaves, sometimes as much as 10 l. long.)
~~The ovary of a dried~~ flower ~~[illegible]~~ expanded
~~to indicate~~ a diameter of about 2½ inches;
ovary nearly one inch long crowded
with 40-60 elevated areolae, with bright brown
wool and brighter brown bristles. Stamina
not very numerous leaving the base of
the tube naked, ~~style hardly inflated~~ Petals bright
purple colour; Stigmata abt 8 (green?)
forming a conic head ~~[illegible]~~ abt 2 l. long.
~~The~~ fruit ~~obtained did not contain any seeds~~, apparently dry
short thick; seeds 3 lines in diam or more, nearly 2 l. thick, with a rather narrow but very broad rim — regular or irregularly shaped.

Pulvilli ~~Areolae~~ somewhat immersed, 4-6 lines apart

(collected on the Mohave by Mr Campbell the past season

beautiful of a uniform

Opuntia Rafinesquii E. diffusa

supra p. 345 ~~[illegible]~~ subsetibosa
~~prostrata~~ articulis (orbiculatis) obovatis, s. elongatis ~~[illegible]~~
perviridibus,
~~compressis~~, foliis subulatis areolarum albido s. griseo-
tomentosarum, rufosetosarum
diametrum superantibus, patulis, remotis;
aculeis paucis plerumque solum marginalibus robustis
singulis patentibus uno alterove minore deflexo adjecto, albidis saepe
apice basique rufescentibus
~~flavibus~~ is alabastro acuto conico, ovario ~~obovato~~ clavato,
pulvillis ~~areolis~~ 20-25 ~~[illegible]~~ remotis ~~margine~~ griseo-villosis
rufosetosis (stipato) sepalis fere sub 13
oblanceolatis ~~acuminatis~~, exterioribus
late petaloideo-marginatis, cuspidatis; petalis 10-13
~~sub 13~~ (sulphureis) late obovatis eroso-
denticulatis ~~[illegible]~~ subemarginatis, ~~plerumque~~ basi intus miniatis
stigmatibus 7-8 erectis adpressis ~~[illegible]~~
flavo-albidis; bacca ~~obovata~~ clavata basi angustata,
clavata ~~subnuda~~ pulposa purpurascente, umbilico immerso sub infundibuliformi
seminibus subregularibus compressis
~~lato~~, ~~obtusisque~~ ~~angusto~~ ~~or~~ plerumque lato compresso marginatis ~~angusto~~ subacuto

var. microsperma, seminibus
minoribus, regularibus, anguste marginatis.

In sterile sandy or rocky
(limestone as well as sandstone) localities
in the Mississippi valley,

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Illinois! Missouri! Arkansas!
North to Wisconsin, east to Kentucky
[illegible] (Rafinesque & A. Well) ~~Nut and~~ probably to Louisiana & Texas
Joints large, orbicular, 3-4
inches in diameter, or obovate
4 or 5 inches long by 3 broad,
sometimes only 2 inches long
(a small variety on sandstone ledges
in southern Missouri); fresh or dark green; Leaves
2½-4 l. long, length about 4 times
the diameter; ~~patent long~~ ~~areolae~~
pulvilli ~~areolae~~ 9-12 l. ~~distant~~ apart, with
short whitish wool and reddish brown
bristles very conspicuous even in
the youngest joints; spines
rarely none, ~~sometimes~~ mostly
few, only on the upper part
or the edge of the joint, ~~single, or~~ rarely
2 or 3, 9-12 l. long, rather stout,
white with darker tip, sometimes
also darker base. — Flowers
2½-3½ inches diameter, sulphur-
yellow ~~without any red~~
usually ~~sometimes~~ with red centre (~~in~~
~~some Arkansas specimens~~) —
Fruit 1½-2 inches long, less
than half that in diameter,
very narrow ~~and stipitate~~ at base,
umbilicus funnelshaped but with rather shallow bottom, much wrinkled & scarred
ripening in the fall, but remaining
fresh on the plant till the following
spring, casting off wool & bristles and before getting naked; edible sweet — Seed 2½ l. diameter,
hardly more than 1 line in thickness,
in the variety 1.8-1.9 l.
rim rather narrow, thick, but
acutish. The var. microsperma
I found in a garden near St Louis, I
could not learn where obtained
though it is probable it came from that region (Missouri) as no other species is cultivated in our gardens.
The spines are rather fewer than
in the usual form or none at all, the flower & fruit
show no difference, but the seed has
only about 2 l. in diameter or less, is more

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compressed and has a very narrow anterior rim.

This species has generally been by western botanists considered identical with the eastern Opuntia vulgaris ~~Nuttall mentions it as occurring in Kentucky & Illinois. Torrey & Gray do not appear to have had any knowledge of this Opuntia~~ Torrey & Gray in their Flora do not give any locality in the Mississippi valley. But Rafinesque had already observed it in Kentucky and in his usual careless manner had indicated 3 species Cactus humifusus, (which growing "from New York to Kentucky & Missouri" probably comprises ~~each~~ both O. vulgaris and our species) all. O. caespitosa Kentucky & Tennessee and O. mesacantha from Kentucky to Louisiana. As it seems impossible to make out from his ~~short~~ incomplete description ~~which the species he had in view, I have discarded his names and~~ what he meant by these different names I take the liberty to discard them all and substitute the author's name for the western species.

§ p. 345 Dr Bigelow collected ~~this plant~~ a large ~~form~~ variety of ~~this~~ O. Rafin. species near Fort Smith on the western border of Arkansas; farther west, where no true O. Raf. has ever been found, he met with several ~~forms~~ which though they show some distinctive characteristics, are ~~probably~~ perhaps not sufficiently different to constitute distinct species. The flowers of none of them are known, nor the leaves, but the fruit & seed carefully preserved by him, not only ~~for~~ furnish important characters, ~~but~~ give us also the means to propagate and cultivate and so further to study them.

Opuntia cymochila E & B

diffusa procumbens, radice fibrosa articulis orbiculatis, pulvillis subremotis ~~griseo~~ griseotomentosis, stramineo, s. fulvo-setosis; plerisque aculeigeris aculeis 1-3 ~~majoribus terete~~ robustioribus elongatis ~~teretibus~~ s. subcompressis tortisque, albidis basi saepe rufescentibus,

patentibus, deflexisque

additis saepe 2-3 minoribus radiatim deflexis; flore ?: stigmatibus 8; bacca obovata, ~~umbilico~~ plano s. ~~parum~~ depresso, areolis 20-25 griseo tomentosis parce setulosis demum nudatis; seminibus irregularibus margine undulato-~~crispato~~ acuto.

On the Camanche plains east of the Llano Estacado, ~~near the~~ 100 degr. and from there to ~~the foot of the~~ Tucumcari hill ~~and to the eastern base of the Sandia Mountains~~ 80 miles east of the Pecos. — Joints 2½-3 inches in diameter orbicular or very slightly obovate; Areolae 6-8 l. distant, the very light yellowish ~~brown~~ bristles ~~numerous~~ and conspicuous only on the older joints; lowest areolae only unarmed, upper ones ~~joints~~ 2-5 spines, 2 or 3 longer ones of reddish brown the lower half

1-2 inches long, lower smaller ones 3-9 l. long

Fruit oval, ~~not at all clavated~~, 1-1¼ inch long purple abt 10 lin diamt pulpy, sweet & edible; seed remarkably 2½ l. in diamet. irregular & twisted, with a wavy or ~~even curly~~ irregular, very sharp rim, whence the name.

The orbicular joints, the numerous spines the oval not clavate fruit, and the curiously twisted seed seem to distinguish this ~~form~~ from O. Rafinesquii, ~~while~~ but these characters may not be sufficiently constant or important, to constitute true specific difference. It may be remarked here that the ~~diagnostic~~ characters of Opuntiae are not yet sufficiently studied to permit us to form satisfactory conclusions about their diagnostic importance.

And we find indeed a form collected on the Sandia Mountains near Albuquerque which in habit & ~~appearance~~ ~~differs~~ does not differ ~~very little~~ from the common form of O. Rafinesquii, but has the seeds of O. cymochila

O. cymochila β. montana

articulis orbiculatis, majoribus, inermibus, s. margine superiore solum aculeatis; areolis remotis stramineo-setosis, aculeis singulis binisve validis, albidis, supra fuscis; bacca obovata subclavata; seminibus irregularibus acute ~~undulato que~~ marginatis.

Hills at the foot of the Sandia Mountains near Albuquerque

Joints 3-4½ inches diamtr, areolae 9-12 l. distant, spines 12-18 smaller ones 4-6 lines long; on some plants entirely absent.

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Fruit 1½ inches long, much contracted at base — with a much depressed almost funnelshaped umbilicus; Seeds the same as in the form from the Plains. —

Opuntia stenochila prostrata articulis obovatis ~~+ suborbiculatis~~ areolis remotis, ~~stramineo setoso~~ ~~fulvo~~-setosis, superioribus solum aculeigeris; aculeis singulis albidis patentibus 1–2 (minoribus deflexis) saepe adjectis; bacca ~~clavata~~, obovata ~~pulposa~~ clavata, pulposa umbilico lato parum immerso, seminibus regularibus crassis anguste obtuseque marginatis.

At the Canon of Zuni,

~~Joints~~ 4 inches long and 3 wide flowered and often ~~prostrate~~ lying flat on the ground (in November) Areolae 1 inch distant, small with yellowish or greenish bristles. ~~Spines~~ Spines 1–1½ inch long, smaller ones less than half as long. Fruit green or pale red, very juicy, Fruit 1½ inches long or sometimes much larger, & more juicy, ~~even~~ 2½ inches long ~~and~~ 1 inch in diameter above, long clavate at base. Seeds quite characteristic; about 2½ l. in diam., ½ l. thick, regular, with very narrow somewhat obtuse rim.

In the same neighborhood another plant was found with similar ~~fruit~~ seed; but smaller more rounded ~~joints~~ and somewhat more spinous

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~~This form has generally been~~
joints, fruit less clavate, smaller, and seeds a little smaller.

Opuntia fuscoatra Engelm.

diffusa, articulis orbiculato-obovatis, tuberculatis, ~~areolis~~ pulvillis vel remotis magnis, griseo-tomentosis, inferioribus solum inermibus setis numerosis robustis, longiusculis fuscis, aculeis (robustis, vel singulis) fuscoatris erecto-patentibus, altero breviore deflexo saepe adjecto; ~~Floris flavi~~ ovario conico, ~~areolis~~ 12–18 fulvo villosis et fusco-setosis stipato; stigmate 5-partito bacca?

On sterile prairie places west of Houston, Texas, F. Lindheimer 1842 fl. May. — ~~The long brown~~ [illegible] The stout brown, upwards almost black spines and the thick bunches of unusually stout brown bristles give this plant a very distinct appearance, it nevertheless ~~appears to be~~ must be taken for one of the forms of the common western Opuntia, till ~~further~~ investigation especially of the root, fruit & seed should decide otherwise. Joints 2½–3 inches long. areolae 6–9 lines distant; bristles 2–3 l. long; spines very stout, 1–1¼ inches long; lower one when present about half as long, but not much less stout. Flower about 3 inches diameter; ovary 1 inch long, areolae covered with long grayish brown wool and the upper ones with a few brown bristles.

see pg 10. & 19. 345

Opuntia grandiflora E. diffusa
adscendens radice fibrosa articulis
valde compressis subinermibus perviridibus
~~orbiculatis~~ obovatis & magnis, foliis subulatis
pulvillo
~~areolam~~ griseo villosa rufosetosa
pluries superantibus patulis,
setis tenuissimis
remotis; aculeis ~~subulatis~~
rarissimis ~~robustis~~ albidis s. basi
~~fuscatis~~ rufescentibus; floribus grandibus
ovario elongato-clavato, areolis
20-25 griseo-villosis, marginalibus
solum ~~rufo~~ setosis, sepalis
sub 10-~~12~~ interioribus late obovatis,
cuspidatis margine pellucidis, petalis totidem
~~emarginatis~~
~~latis~~sime obovatis, eroso denticulatis,
sulphureis, basi miniatis, stigmatibus 5 erectis adpressis;
bacca ~~obovata~~ elongata, subnuda
umbilico infundibuliformi; ~~seminibus~~

—

Near Industry on the Brazos,
Texas, coll. by F. Lindheimer
1844, ascending near a
foot high; joints often 5-6
inches long, unusually thick;
Leaves 3-5 l. long 4 or 5 times as long as diameter. areolae 9-12 l. distant,
covered with long brown bristles
on the older joints; spines ~~quite~~
~~rare~~ rather robust, about 1 inch
long, very rarely present;
Flower 4½-5 inches in diameter,
pale sulphur yellow with red
base; ovary 2 inches long
or more; number of sepals &
petals rather less than in Op.
Rafinesquii; petals over
2 inches long and 2½ wide;
abt
fruit ~~1~~ 2½-~~4~~ inches long 9-10

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Living in [illegible]. Seed ~~unfortunately~~ lost preserved

This showy species has been cultivated by me in St Louis (in the open ground for many years) till the severe frost of the winter 1853-4 killed it — ~~In the time of this~~ Every year it brought forth in June & July an abundance of its showy flowers, perhaps the largest in this genus, and bore fruit, from which I have raised young plants.

The absence of spines subereet growth of the large & thin joints and the crowded brown bristles assimilate this plant to Prince Salm's O. intermedia but a comparison with an original specimen sent by Prince Salm ~~procured~~ shows it to be distinct. The difference seems to consist principally in the ~~short~~ much longer and more slender leaves; the leaves of O. intermedia are more like those of O. vulgaris subulate from an oval base & hardly more than 2 lines long and not much less in thickness; flowers not seen.

Opuntia vulgaris Mill.

diffusa prostrata, radice fibrosa, articulis obovatis s. orbiculatis, laete crassioribus pal.! viridibus, subinermibus pallidis; foliis abbreviatis ovatis, cuspidatis, areolam parvam subimmersam ~~duplo~~ bisterve superantibus, erectis s. sub adpressis, parce stramineo-setosam sub remotis, aculeis rarissimis, singulis robustis fusco variegatis ~~patentibus~~ suberectis; floris alabastro bacca obovata, ~~subumbilicata~~ pulposa purpurascente; seminibus regularibus crassis, margine latiusculo, crasso acuto

see pag 283

On the Potomac above Washington!

From New Jersey to Georgia & Florida. Probably only on the ~~eastern slope~~ low countries east and S. east of of the Alleghany

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mostly mountains and not far from the seacoast, Joints 2–4 inches long and 2–2½ in diameter, rather thick and fleshy, ~~with~~ of a ~~pale~~ light green colour; leaves 2½ l. long, and about half as much in diameter, (erect and appressed), shorter in proportion to their thickness than in many other of our species; ~~areolae~~ small, rather immersed, with grayish wool, and few & very short yellowish bristles, which only in the oldest joints become ~~longer than those~~ longer & more crowded. Spines rarely seen, sometimes 1 or 2 present on a plant, stout, about 9 lines long, mottled with yellowish & more or less brownish red ~~mixed~~. ~~Flowers unknown to me; said to be 2 inches in diameter, with 5 stigmas~~; fruit 1 inch long; seeds 2½ l. in diameter, ½ in thickness, (unusually thick) very regular.

see pag. 283

This is the ~~Cactus Opuntia~~ Opuntia vulgaris cultivated in European gardens, and described in European works, and probably the only species found in the eastern States; in the South there must be more, perhaps 2 species according to Elliott — but I have no means to determine them never having been able to obtain any from the southeastern States. The species described ~~was brought from~~ (from the neighbourhood of Washington by Dr. Wislizenus)

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II p. 206

Opuntia macrorhiza E. in pl. Lindh. see pag 81

prostrata, adultis radicibus tuberosis, junioribus fusiformibus, articulis obovato-orbiculatis compressis, perviridibus; foliis subulatis elongatis, patulis, ~~remotis~~, ~~areolis~~ pulvillis subremotis griseotomentosis & junioribus parce rufosetosis, vetustis setosissimis; aculeis paucis plerumque solum marginalibus ~~robustis~~ validis singulis patentibus uno alterove minore deflexo subinde adjecto, albidis saepe basi fuscescentibus; floribus sulphureis basi intus miniatis ~~rubellis~~, alabastro conico acuminato, ovario obovato-clavato, areolis sub 20 griseovillosis et parce rufosetosis. sepalis ~~12~~-13 oblanceolatis, exterioribus late obovatis cuspidatis; petalis 8 ~~sepala superantibus~~ late obovatis obtusis ~~subcuspidatis~~ emarginatis ;? ~~cusp~~ erosodenticulatis, stigmatibus 5 erectis adpressis pallide flavis; bacca obovata basi clavata subnuda, pulposa virescente s. rubella umbilico lato planiusculo; seminibus subirregularibus, compressis, ~~margine~~ acute ~~integerrime~~ marginatis.

Naked (rocky (sterile) places on the upper Guadeloupe in Texas. Fl. May & June, Fruit ripe in fall. — Roots in old specimens form one or more large fleshy tubers, sometimes 2 or 3 inches in diameter; even in young seedlings the rootlets soon swell and assume a fusiform shape; as also the roots of cuttings. — Joints 2½–3½ inches long and ~~hardly~~ somewhat less wide, often almost orbicular. Leaves subulate 3–5 lines long, 4 or 5 times the length of their diameter. Areolae 9–12 l. distant

rather small, and with few and short red brown bristles; on the old stems however they become pulvinate, 6 lines in diameter, densely covered with long darkbrown bristles. Spines sometimes entirely wanting; mostly only few the larger ones abt 1 inch long, smaller ones when present less than half as long. Flower 3 inches in diameter; ovary 1 1/4 inch long; petals 1 1/2 inch long 1 inch wide; stigmata 2 1/2 l. long. Fruit sweet & pleasant abt 1 1/2 inch long, umbilicus rather flat, smooth, 6-7 l. wide (not wrinkled or screwed as in O. Rafinesquii) Seeds 2 or 2 1/4 l. ~~wide~~ in diameter, edge rather acute, hardly different from the seed of O. Rafinesquii.

The constantly tuberous roots seem to constitute this plant a distinct species though in most other respects it seems to be hardly different from O. Rafinesquii. It remains to be seen whether those characters are sufficient to establish a species.

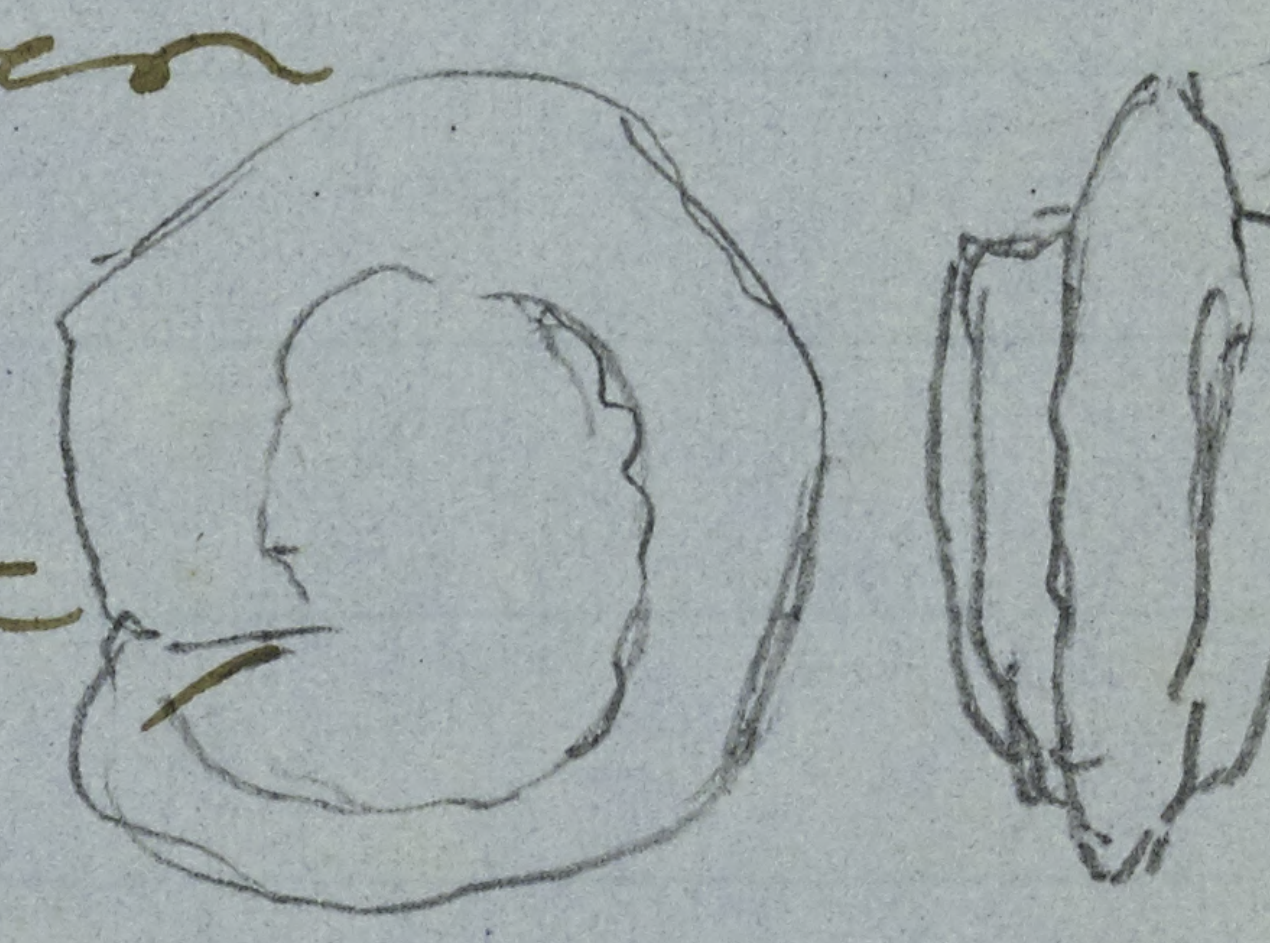
O. fusiformis E. & B. Opuntia ~~bulbosa~~ ~~tuberifera~~ E. & B.

prostrata radicibus ~~elongatis~~ fusiformibus irregulariter ~~bulbosis~~ incrassatis articulis orbiculatis (majusculis) pulvillis subremotis + griseo villosis ~~setis~~ elongatis ~~flavo~~ virescenti-fuscis gracilibus ~~plerumque~~ pluribus s. solum superioribus (armatis) aculeis 2-3 gracilibus inaequalibus) patentibus ~~s. [illegible]~~ deflexis s. albidis

+ foliis subulatis elongatis patulis

bacca ovata basi vix clavata
nudata pulposa rubella, umbilico immerso
subinfundibuliformi; seminibus subirregularibus,
crassis, ~~late~~ acute ~~(?)~~ marginatis.

In the region of the Cross Timbers
from the 97 to 99 degree of longitude,
~~where O. Rafin~~ west of the dominion
of O. Rafinesquii and east of that
of O. rymochila. Joints about 4 or 5 ~~or more~~
inches in diameter; leaves 2½–3½ l. long; areolae 9 or 10 l. distant
with ~~long~~ numerous stout (often 2 l. l.) yellowish brown bristles;
spines 1 or 2 ~~longer ones~~ 1–1¼ inch long
~~and often 1 or 2 smaller ones~~ with
a smaller one half as long, slenderer
than in most other allied forms.
Fruit 1½ inches long, umbilicus 6 l. wide.
Seed rather larger & thicker than in
O. Rafinesquii 2¾ l. in diameter & 1½ thick,



Dr Wislizenus brought specimens from
the Cow Creek and Little Arkansas,
in the same ~~latitude~~ longitudes, but about 100 miles
further north, which, though no
mention is made of the root
probably must be referred here:
Joints orbicular or obovate, leaves
~~on young joints~~ about 3 l. long; young areolae
covered with long light brown wool
and short yellowish brown bristles, which
elongate and increase with age.
Spines only on the upper ~~joints~~ areolae 1–3.
Flowers about 2½ inch in diameter, yellow
ovary with 25 areolae lower ones very small
(as in all the forms of this group);
upper ones with thick light brown wool
and few brown bristles; stigmata 8.

In another specimen the flowers are

only 2 lines in diameter, the ovary quite slender; stigmata also 8.

Dr Hayden has collected in Nebraska Territory on the Missouri River, in the same longitude another bulbous rooted Opuntia, which also may belong here; joints orbicular 3 ~~-4~~ inches in diameter, [illegible] 2½ [illegible], areolae ~~6~~-8 l. distant, with gray wool and few brown short bristles; in old joints numerous & longer; spines on the upper areolae, 1 larger ~~(about~~ 1 inch long) white, with red base, subulate, deflexed and ~~to~~ 2 smaller ones; ~~bottom~~ areolae naked or with a few very short (1-3 lin) deflexed spines; fl. & fr. unknown. –

dark green

white

All these tuberous rooted Opuntiae may belong to one species; it is remarkable that they all are ~~found~~ almost under the same degree of longitude, The plants from the Canadian and Arkansas are distinguished by the long yellowish ~~[illegible]~~ bristles, the Texas & ~~Nebraska~~ plants ~~have~~ redbrown bristles.

O. bulbosa seems to be distinguished ~~from~~ O macrorhiza by the lighter coloured bristles, the ~~thinner~~ slenderer and more numerous spines the larger number of stigmata and the larger seeds; but though the appearance of the plants are different we can not see enough in these marks to distinguish them specifically

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Opuntia brachyarthra E&B.

Prostrata s. ascendens, articulis abbreviatis, articulatis s. majoribus ovatis, tumidis, saepe subglobosis; areolis subtuberculatis confertis magnis albotomentosis parce setulosis, fere omnibus armatis, aculeis 3–5 albidis s. fuscatis, patentibus 1–2 majoribus sursum divergentibus ceteris minoribus minimisque subdeflexis; floribus parvis, ovario subgloboso, areolis 12–15 tomentosis, setosis, superioribus spinulosisque gerente, sepalis exterioribus obovatis cuspidatis, petalis orbiculato obovatis, stigmatibus 5.

At the foot of Inscription Rock, east of Zuni under Pinus edulis – only found in that single locality. – A singular plant, with short tumid joints one growing from the top of the other so as almost to resemble the joints of a finger. In the absence of ripe fruit we are unable properly to class this species. The tumid joints and the somewhat spinulose fruit seem to ~~refer it to the~~ associate it with O. fragilis; the whole appearance of the plant ~~may~~ indicates an alliance with Vulgares; and the subglobose joints seem to assimilate it with Glomeratae Salm.

Joints 10–15 l. long, about 10–12 l. wide and of nearly the same thickness; areolae large, white, ~~tawny~~ or when old gray tomentose, with very few short yellowish bristles, even in the oldest joints not many; spines 9–12 l. long rather stout, terete, often with 1 or 2 very short ones 1–2 l. long deflexed.

On our specimens collected Nov 19 no ripe fruit was found, but many remains of flowers with ~~sterile~~ fleshy sterile red globose-obovate ovaries, 3-4 l. long; ~~some~~ vegetating, enlarging and becoming spinous; but generally only ~~a few~~ some upper areolae bear a few short spines. The dead flowers seem to have about 1 inch in diameter; about 5 sepals, and 8 or 9 sepals; style with 5 stigmata. ~~We have succeeded in raising this plant~~

3333

June 1856

Notes made in Examining Schotts Sonora Collecti

Mam. Grahami E see pag

flowers below ~~that~~ but near the top; lateral ~~collected~~ in ~~flower~~: . .

„From the Colorado basin to the Sierra Madre" under the name „M. tenuispina" and „Llanos next Agua thermal, Gila" under the name of „M. petens"; also „Silver valley near Pimos Village"

The latter is the same plant as the former, but with more pulverulent spines; 15-16 radial ones central one much longer. seed not to be distinguished. both forms belong to M. Grahami.

The former one is in flower; collected when?

flores laterales, subinudi, 9-12 lin longi sepala sub 13 lineari-oblonga obtusiuscula, ciliolata; petala sub 13 (?) roseata, lineari oblonga, angust. exteriora mucronata interiora obtusa retusa, v. emarginata. Stamina brevia, stylus longe superans stigmata 6-8 elongata filiformia suberecta bacca (viridis?) ovata, semina 0.4-0.5''' longa scrobiculata.

Flowering season June - August

Mam. phellosperma, Sierra Prieta Sonora — only seeds were collected. Granit hills near Fort Yuma

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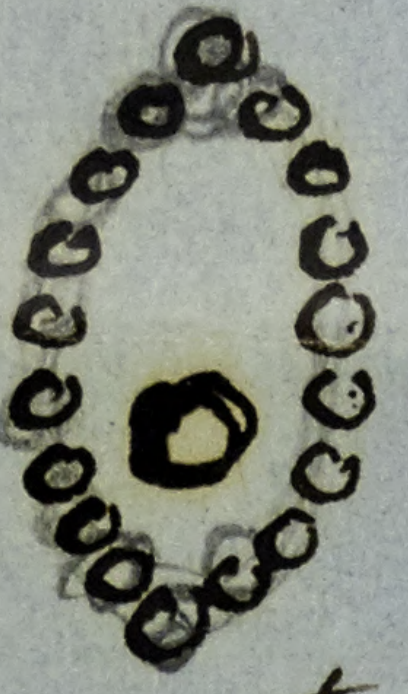
n. sp.

Mam. recurvispina E. (M. arachnoidea Schott)

Simplex globosa s. depresso globosa,
tuberculis ovatis obtusis ~~subcompressis~~ supra ~~[illegible]~~ profunde sulcatis
~~oblique areolati~~ confertis, 13 seriatis; areolis ovatis,
obliquis, aculeis radialibus 12–20 basi bulbosa
compressis, rigidis, recurvis, flexuosisve
intertextis semipollicaribus ~~semifimbrialibus~~ albidis corneisve, apice saepe adustis;
aculeo centrali singulo (~~rarius~~ iterum
adventitiis secundo superiore) robustiore,
longiore, obscuriore ~~deflexo ex~~ decurvato
(rarissime rectiusculo);
floribus ~~verticalibus~~ in axillis
villosissimis tuberculorum juniorum ~~villosis~~ subverticillatis
majusculis flavicantibus extus
fuscatis; sepalis lanceolatis acutis
integris, petalis erosulis



Eastern parts of the Pimeria alta in Sonora, especially in the Sierra del Pajarito A. Schott. flowering: June–August. Single heads mostly depressed, 4–8 inches diameter (a living specimen before me has only 3 inches diameter): — Tubercles in my specimen in 13 rows; 5–6 lines long ovate, somewhat compressed from above & below; Areola very oblique, ovate, 2–2½ l. long, white woolly when young; Radial spines in my living specimen 14–16, according to Schotts notes 12–14; in his dried specimens as many as 20; one distinctly

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MISSOURI BOTANICAL GARDEN

June 1856

superior, and one inferior, the others ~~arranged~~ laterally in closely arranged lines with swollen and compressed bases; 4-9 lines long, upper ones often a little longer than lower ones. Central spine 6-10 l. long, darker, mostly strongly recurved, appressed so that the plant can be handled without ~~injuring~~ hurting the ~~hand~~ fingers, much like M. compacta to which it bears a strong resemblance, but is very distinct from it by the arrangement of the flowers. These are not strictly vertical, but appear in the axills of the younger tubercles, being pushed aside by fatter ones with the flowerbuds in their axills, or rather at the base of the ~~woolly groove~~ tubercle in the woolly groove. Flowers about 1 1/2 inches long, and of the same width, petals lemon yellow, darker and with a brownish tinge outside, along the midrib.—

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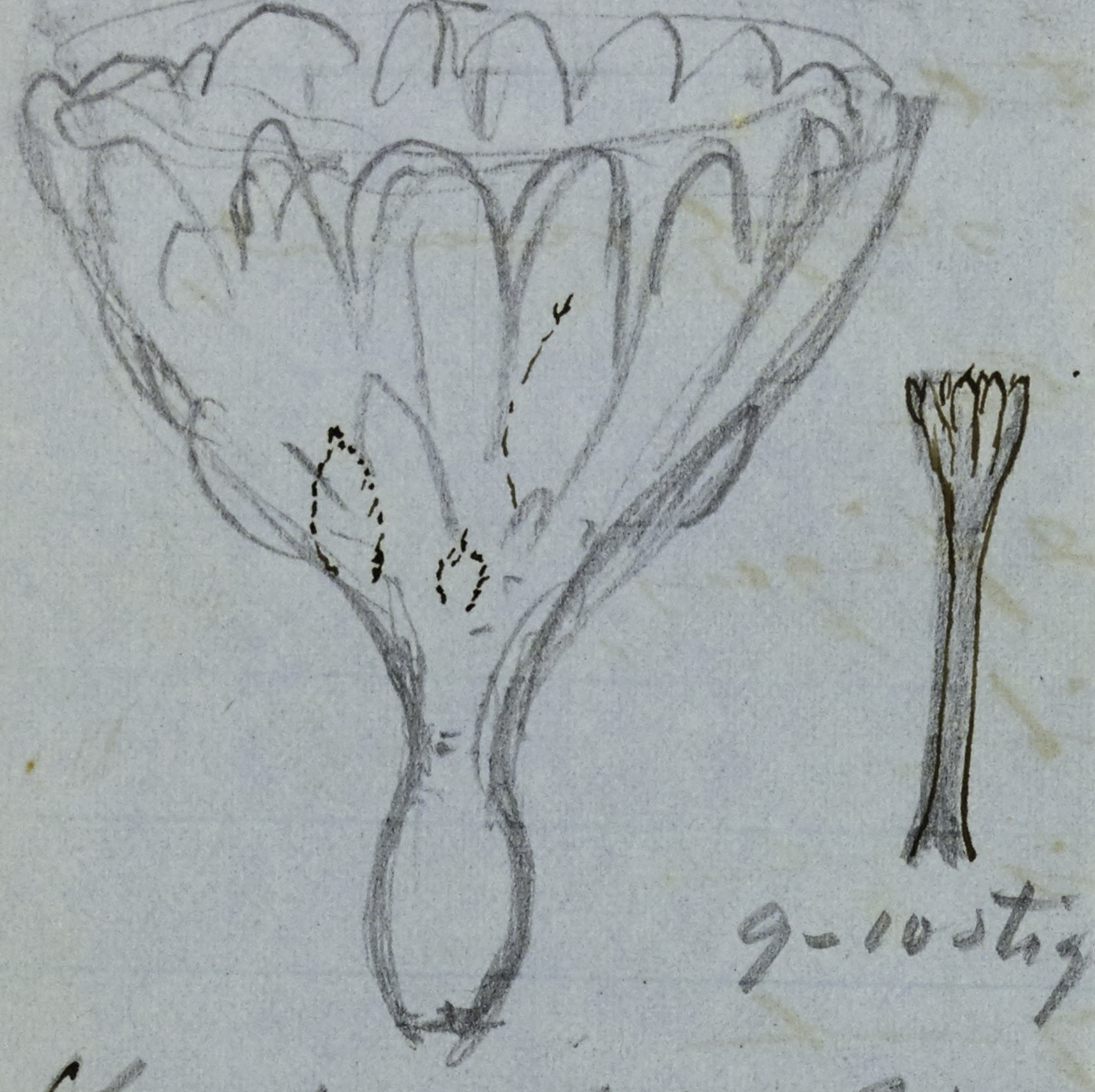
robustispina A. Schott

Mamillaria ~~valida~~ E.

~~robusta~~ simplex s. caespitosa tuberculis pollicaribus laxis, patulis, villoso-sulcatis, ~~axillis villosissimis~~; areolis orbiculatis, magnis, junioribus tomentosis; aculeis radialibus 12–15 rigidis validis, ~~corneis apice adustis~~ inferioribus robustioribus s. ~~deorsum~~ obscurioribus rectis curvatis, superioribus rectis fasciculatis paulo tenuioribus; ~~o~~centrali singulo compresso, deorsum recurvato robustiori longiori (subinde altero adventitio superiore rectiore; omnibus corneis apice atratis ~~fat~~ subpollicaribus

Floribus e basi tuberculorum juniorum villosissima ~~t~~ campan ~~sub~~ bipollicaribus, luteis; ~~tubo contricto tenui~~ ~~peta~~ sepalis lanceolatis, inferioribus ciliolatis, ~~petalis~~ stigmatibus 9–10; seminibus obovatis rubris ~~magnis~~ laevibus lucidis fuscis



Fe tubo constricto tenui campanulatis

On grassy prairies (Llanos) on the south side of the Babuquivari Mountains; fl. July. A large plant, caespitose perhaps from the effects of prairie fires as Mr Schott suggests; the tubercles ~~nearly~~ ¾ to one inch long, and about one inch distant from one another. Spines from 9–15 l. long, lower ones stouter, but a little shorter, dark on the upper and lighter coloured on the lower surface; central spines one or two, stouter but not much longer than the others; base of lower or principal central spine nearly one line in diameter

areolae 3½–4 l. in diameter.

Flowers scattered on the upper youngest part of the plant in the axils or rather on the base of the young tubercles; 1½ to 2 inches long ~~and wide~~ characterized by a very slender tube, contracted above the ovary; petals "saffron yellow" filaments from base of tube. The seeds are fully 6/12 l. long, the largest of any Mammillaria examined by me; albumen more distinct than in Mammillaria usually; embryo curved, with somewhat foliaceous accumbent cotyledons. The embryo ~~apparent~~ resembles more that of many Echinocacti than any Mammillaria known to me.

The plant is evidently closely allied to M. recurvispina and to M. Scheerii, is distinguished by the very stout spines and the slender constricted tube of the flower. from the former also by the shape of the tubercles and arrangement of spines.
M. Scheerii has ~~filaments from~~ apparently lower part of tube naked, bears filaments higher up;

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Mam. radiosa var neo Mexicana

Ovata subsimplex; tuberculis 3/4 ~~poll~~ longis (axillaribus Schott) sulcatis; aculeis radialibus 30-40, inferioribus brevioribus ~~robustioribus~~ 4 lin longis; superioribus longioribus 6-9 lin longis, ~~fasciculatis~~. centralibus 3-5 inferiore porrecto brevi, ceteris arrectis longioribus

confertioribus

Floribus centralibus; sem. scrobiculatis lin longis.

El Podrero northern slope of the Sierra del pajarito. 111° longit 32°.20 latit. — Plants 2-3 inches high, a little less in diameter.

Among Schotts living specimens was his "M. acicularis" which is = M. macromeris but the description of No. 8 "tubercles very closely arranged" does not fit well, nor the 30-40 radial spines which seem to point to M. radiosa "Sierra de los Organos near Fort Bliss, West Texas"

M. nidus diaboli Schott Escondido Spring on the Pecos" hemispherical tuft of 50-60 heads

M. longimamilla Schott, tubercles 1" long 6 interior & 6 exterior spines Howard spring El Paso road. I can not make out — = M. macromeris?

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Cact. 71

June 1856

Mam. prismatica Schott. ~~from~~ Sierra del Pajarito, Sonora. Evidently one of the plants allied to M. applanata perhaps M. gummifera 13 radial spines inferior 6-8, superior 2-3 l. long centre spines only 2-3 l. long, spines purple. — But: red berries central! This must be a mistake. M. excavata the same with more deeply depressed center.

Echinocactus viridescens Nutt. (E. Stella maris Schott) Seabeach of San Diego 13-21 ribbed 4 central spines recurved 13 radial ones much shorter; lower central one longest

E. polycephalus E & B = (E. cottoniferus Schott. "heads 10-15 inches long by 5-8" diameter. cespitose. Ribs 10-15 in number. on the Gila and Colorado")

See pag 195

Ech. ~~Bigelovii~~ Emoryi E (E. Caput Medusae Schott) "large, grayish green, 2 1/2 feet high 20-22 inches diameter" flowers in Aug & Sept. atropurpureous. — 19-20 ribs straight or oblique

Punte di Agua, Sierra del Pajarito S. de la Union, S. di Sonoyta

grandis, ovatus glaucescens 13-20 costatus, costis rectis obliquisve obtusis tuberculatis; areolis ovatis, junioribus fulvo-tomentosis aculeis 8-9 subaequalibus, ~~8-9~~ robustis ~~rubellis~~ subangulatis paulo recurvis ~~annulatis~~, rubellis demum fuscatis, apice pallidioribus corneis; radialibus 7-8 s. interdum adjecto aculeo tenuiore summo 8, centralibus majoribus

1–2 ~~[illegible]~~ pollicaribus, centrali singula recurva 1. subhamato, paulo robustiore; Floribus magnis purpureis variegatis squamis ovarii 25 cordato-reniformibus ciliolatis; sepalis tubi sub 30, lanceolatis, acutis, inferioribus ovatis, ciliolatis, superioribus spathulatis ~~oblongis~~ lanceolatis ~~[illegible]~~ acutis; petalis sub 25 ~~spathulatis~~ ~~oblongis~~ acutis, ~~obtusis~~, ~~sensim [illegible]~~ versus apicem ~~fissis~~ ~~[illegible]~~ fimbriato-fissis; stylo stamina vix superante, profunde 18–20 fisso:

lanceolatis
acuminatis

Largest plants (Dr Bigelow from Guaymas, Sonora) 36 inches high and 24 in diameter, (Dr Schott Sonora) 30 inches by 22; 19–20 ribbed); smaller ones (Bigelow on the ~~[illegible]~~ Colorado near Mouth of Bill Williams fork ?) less than a foot in diameter and with 13 ribs. Flowering in August & September. ~~Fruit not seen~~. — Ribs tuberculated, tubercles interrupted, rounded; areolae 6–10 l. long, without the floral areola which is smaller and separated from the other by 1–5 ~~glandular~~ ~~[illegible]~~ tereti obtuse glands, which finally become ligneous. Areolae 1/2 – 2 inches distant, Radial spines 1–2 in. Schott's, in one of Bigelow's specimens,× in the largest specimen preserved in the ~~Academy~~ Congressional Garden, ~~the longer [illegible]~~ they are nearly 3 inches long. — The lowest radial and if present the one or two uppermost radial spines are the

× the four upper lateral ones are the longest and stoutest, and

most slender (two only in the large specimen from Guaymas). —

Flowers aggregated near the vertex as in E. Wislizeni; about 3 inches long, dark brown purple outside; petals purplish with yellowish margins. ~~Fruit not collected~~. Lowest part of tube naked; filaments rising from the short tube and its very thick fleshy upper part extremely numerous; style thick as long as the longer (exterior) stamina, divided to the middle into 18 or 20 filiform stigmata; — Fruit ~~and~~ seed unknown yet.

Ech. Lecontei E.

western parts of Sonora fl. Aug & Sept. see pag 191 ff where I have added what notes Schotts specimens ~~indicated~~ furnished

Opuntia vulgaris Mill. see pag 267

Mr Curtis sent me in May a living specimen from Society Hill S.C. ~~in a letter~~! It consisted of 2 joints ~~with~~ 2 flowerbuds on one of them. After a few weeks the flowers opened (June 2d) and were figured:

ovary 10 lines long, with 5 or 6 areolae on the surface and 5 on the rim.
13 ~~exterior~~ sepals, exterior ones fleshy, lanceolate ~~acute~~, interior ones broader obovate, cuspidate, petaloid on margin; 8. petals broadly orbicular obovate, emarginate, slenderly aristulate, sulphur-yellow

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filaments & stamens yellow; stigmata 5 erect, sometimes somewhat twisted yellowish white. –

Flower bud subglobose, obtusish, with the ovary 1½ – 1¾ inches long; fl. about 2 inches diameter when fully open.

O. Rafinesquii is distinguished by having more elongated ovary, with 20 or more areolae, acute bud, about 13 sepals and as many petals, and 8 stigmata.

floris alabastro globoso obtuso, ovario clavato, pulvillis sub 10 sepalis tubi sub 13 exterioribus lanceolatis, interioribus obovatis cuspidatis margine petaloideis, – petalis 8 ~~sulphureis~~ late obovato orbiculatis ~~sulphureis~~ emarginatis mucronulatis, sulphureis; stigmatibus 5 erectis albidis; bacca obovata breviter clavata demum nuda etc.

Cereus pectinatus var. rigidissimus

subsimplex, ovato cylindricus ad costis 20–22 interruptis; areolis lineari lanceolatis arctatis approximatis junioribus ~~parce~~ lanosis; aculeis omnibus radiantibus, subrecurvis ~~e~~ basi bulbosa ~~subcompressa~~ ~~stipulatis~~ subulatis acutissimis rigidissimis, albidis, flavidis s. rubellis, subpellucidis; lateralibus sub 14 (12–16) longioribus (3–5 linearibus) robustioribus, infimo singulo vix breviore, superioribus 3–6 setaceis brevibus subfasciculatis; floribus sub vertice ipso (ex areolis anni prioris summis) oriundis; ovario pulvillis 50–60 stipato ~~8–12~~ aculeolis rigidis 8–12 munitis; tubo ipsius sepalis sub 40 inferioribus, subulatis ad axillam aculeiferis, superioribus sub 20 lanceolatis acuminatis; petalis sub 20 spathulatis ~~purpureis~~ acutiusculis medio dentatis purpureis; stigmatibus sub 12; bacca ovata globosa, aculeata; seminibus tuberculatis.

In the Sierras of Pimeria alta and further west in Sonora flowering in June & July 1/2 – named by the natives Cabeza del viejo

Plant, 4–8 inches high by 2 inches diameter; ~~spines very rigid, larger ones 4–5 lines long~~ areolae 2–2½ l. long approximating, but in the larger full grown specimens not more than 3 or 4 ~~within one~~ occupying the length of one inch of a rib; spines (~~extremely rigid~~), all radiating and interlocking, extremely rigid variegated, the latest ones of each season being more rose coloured, the earliest ones rather yellowish, forming in this manner variegated bands

around the plant. The lateral and especially the lower lateral spines are the longest the single inferior spine is ~~not~~ somewhat ~~much~~ shorter (2 l. long), but the uppermost are short bristles only. Central spines are entirely wanting in the numerous specimens examined.

3-4½ l. long

Flowers appear near the vertex just on the outer edge of the ~~top~~ rounded or somewhat depressed top; on the upper areolae of last years growth; as in many of our Echinocerei, which therefore sometimes have been taken for topflowering by careless observers. Flower 2½ – 3 inches long of same diameter, bright pink! purple. ~~Fruit &~~ Spines on ovary 2-3 on tube as much as 4-6 lines long; Fruit ~~oval about~~ subglobose often near one inch long; pulpy and eatable; fleshy part +; — Seed not ripe 0.'''6 long, very strongly tuberculate closely resembling seed of E. caespitosus.

~~or pink~~ or rosecoloured darker along the middle of the petals

+ of the stem is also eaten by the inhabitants of the country

I find in Mr Schotts collection a ~~ps~~ small specimen 1 inch in diameter, 2 inches high, with 15 ribs with over 12 areolae on one inch of rib; 30-35 very rigid, recurved spines, the longer ones 1-1/3 l. long, the 4-6 of them very small on upper part of areola; — a most elegant little form.

This form is distinguished from C. pectinatus only by the greater rigidity and thickness of the radial spines and by the entire absence of central spines.

The~~se~~ forms, which are allied to C. pectinatus are very difficult to distinguish and it is quite probable that they may run into one another as Dr Poselger who has seen thousands of them in Texas and Northern Mexico is inclined to think.

I find that C. pectinatus as well as the plant under consideration here has always a distinct single inferior spine, which is only a little shorter than the lower lateral spines; C. caespitosus has generally several of the lowest spines much shorter & weaker than the lateral ones; C. adustus has fewer ~~lateral spines~~ ribs and ~~all~~ more oval areolae, lowest spine much like that of C. pectinatus. Flowers of C. adustus not yet known.

Caespite parva ramosus

C. Hystrix Schott
see pag 94

C. Engelmanni Parry ovato-cylindricus 11-13 costatus, costis interruptis; Areolis orbiculatis, junioribus villosis, aculeis radialibus sub 13 albidis
apice adustis sub angulatis rectis s. paulo recurvatis; lateralibus 6 longioribus, inferioribus 3 vix brevioribus, superioribus sub 4 parvis ~~con~~ centralibus 4, ~~recta~~ ~~multo~~
rectis, incurvatis, multo longioribus (gracilibus ~~(1-2 pollicaribus)~~) gracilibus ~~angulatis~~; inferiore albido longiore ~~porrecto~~ porrecto s. deflexo, 3 superioribus fulvis arrectis; floribus sub apice ~~lateralibus~~, ovario pulvillis ~~sub~~ 30 stipato aculeolis rigidis 8-14 munitis, sepalis tubi ipsius inferioris 15-20 ovato lanceolatis, ad axillam villosam aculeiferis; ~~petalis purpureis~~ stigmatibus ~~12~~ erectis viridibus, bacca ovata; seminibus oblique obovatis, tuberculatis ~~et scrobiculatis~~ foveolatis.

Common in the Gila Valley especially near the casa blanca above the Pimos Village; fl. in June — ~~Stems~~ ~~apparently~~ loosely caespitose, not more than 4-6 or 8 5-10 or 12 inches high. Radial spines 3-6 l. long, central ones 1-2 inches long; ~~upper~~ one shortest, lower one longest. ~~Flowers~~ rather low down on the plant; fruit at last naked, fleshy, 1½ inches long, 1 inch in diameter; Seed 0.5-0.6 l. long, similar to that of C. Fendleri, tubercles running
irregularly together ~~and~~ ~~forming~~ irregular pits. —

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O. Xerocarpa

folia minuta, pulvilli plerique armati aculeis pluribus radiantibus setiformibus interioribusq robustioribus

Engel

St Louis July 1st 1856

Mr Wetzel

to Dr Engelmann

& July

to medical attendance on self in May & June	$ 11.00
to — — — Mrs Wetzel in February	9.25
to — children Febr to May	46.25
	$ 66.50

3561

Cact. 73 June 1856 289

This plant is no doubt closely allied to C. chrysocentrus and C. variegatus which with it may form a single species.

No. 7. Cereus Pitahayita Schott, said by Schott to resemble the "Cucumber plant" (probably C. cuneacanthus) has seeds 0.6-0.7 l. long, tuberculate-foveolate (like C. Fendleri) and may be a different species. — Sierra de Pajarito, Sonora

Seed of C. cuneacanthus is smaller and strongly tuberculate.

No. 10. C. decarostatus Schott — subcaespitose 10 ribbed, 12 inches high 4 in diameter 11 spines, about 1 inch long — living specimen in Washington = C. paucispinus fide Schott.

Echinopsis fl. in Goebels Garden June 1856
20 ribs — in the younger bunches of spines 9 dark brown, one central, in the older ones many central ones. — flower 9-10 inches long, exterior petals recurved, 4-5 inches in the greatest expansion, pale purplish blue interior petals ~~campanulate~~ more erect, forming a campanulate corolla of the most delicate pale violet hue. Stamens and style = E. Eyriesii white. — Plant 5 inches high ~~spines~~ about 3/4 inch long fl. opening at nightfall open till following noon

Cereus giganteus. All through the elevated localities from the basin of the Californian Gulf to the Sierra Madre.

Flower coll. by Mr Schott is 4-5 inches long, with rather slender tube; ovary with abt 40 triangular scales, with conspicuous white wool over 1/4 inch long; the 20 lower triangular sepals ~~scales~~ of tube also with white wool in axills. Above 20-40 sepals (altogether 50-60 sepals) Lowest part of tube quite free of stamina

Cereus Thurberi caulibus erectis
see pag 166 s. adscendentibus elatioribus (10-15 pedalibus), articulatis fasciculatis
13-14 costatis, sinubus ~~sulcis~~ planiusculis;
areolis subdistantibus, pulvinatis,
junioribus griseo s. fulvo tomentosis
aculeis 7-15 ~~rectis~~ gracilibus ~~robustis~~,
rectis s. flexuosis fusco atris, demum cinereis ~~irregulariter~~
valde inaequalibus, irregulariter
fasciculatis; floribus infra
plantae apicem lateralibus aggregatis;
ovario squamis sepaloides
triangularibus ~~plurimis~~ 80-100
pluribusve ~~imbricato~~, axillis ~~lanam~~ apressam
albidam vel fulvam ~~gerentibus~~ saepeque aculeolos
paucos nigricantes gerentibus
sepalis tubi sub 50 oblongis, superioribus acutiusculis, superioribus
obovato-spathulatis obtusis; petalis carnosis
albidis bacca globosa, ~~majuscula~~ magna,

~~olivacea~~ aculeolata demum nuda
olivacea, intus coccinea; seminibus
numerosissimis oblique obovatis, sublaevibus
(minutissime sub lente tuberculatis)
lucidis, hilo oblongo subbasilari, albumine nullo embryone cotyledonibus foliaceis incurvis [illegible]

Sierras of Sonora, westward
of the Sierra Madre and from there
to the southward flowering June & July, fr. ripe July & Aug.

Stems ~~10~~ 5 – 15 from one root
fasciculated, erect or ascending, curved inward (á crochet Chant., Schott) 10–15 feet high
articulated, lower joints 2–3
upper ones 5–6 feet long, of 4–6
inches in diameter; 13–14 ribs very slightly
~~divided by very sh~~ elevated.
Areolae ± 12–15 l. distant from one another,
only about 3 l. diameter ⊕ ~~[illegible]~~
± pulvinate, covered with brownish or ~~dirty whitish~~ ashy
wool. ⊕ Sp
(⊕ Spines irregularly fasciculated,
7–10 according to Schott's notes, but
15 in the only bunch of spines before me and only bunch accessible to me
slender, flexible, almost setaceous
very unequal in length, from 5 to 18 lines
long in the same bunch.

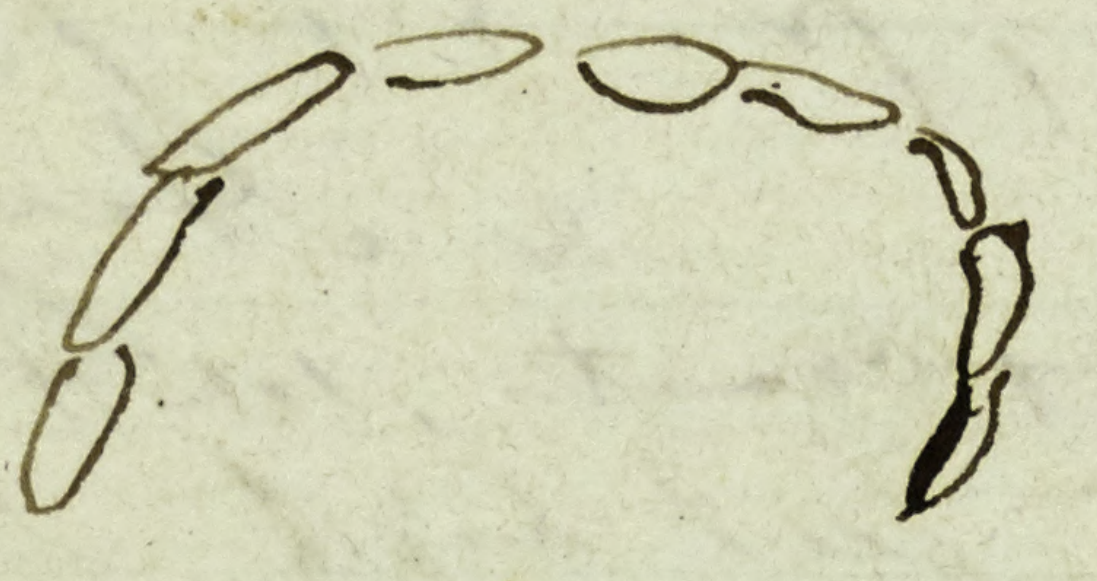
It ~~may~~ is quite possible that the flowering part of the stem producing a larger number of thinner spines and that in this manner this species forms the most natural transition to Pilocereus to which the next one undeniably belongs; spines partly deciduous as they [illegible] Schott who has found the [illegible]

Flowers near 3 inches long towards the top of
the plant, usually ~~but often~~ from one half
to one and one half foot below it.
Ovary very densely imbricate with scales,
~~in their~~ axils ~~brownish~~ dirty wool and
black bristly spines, which also
cover the fruit, but are easily
brushed off ~~at~~ maturity. These black spines on ovary are wanting in Thurberi
Fruit delicious and large (like a Span. orange, 3 inches diameter)
the crimson flesh dotted with
the numerous black seeds. These seeds

are abt 0.9 or even 1.0 l. long, ~~black~~
~~shining~~, only a little larger than those of
C. giganteus, black shining but very minutely tuberculate
hilum more oblique, subbasilar.
Seeds germinate like those of
C. giganteus & C. Schottii with very
short Cotyledons, ~~much like~~ and grow
up with a globose head like the
Echinocerei, — accord. to Mr Schotts observatio

The Skeleton of this species is
formed of flattened bundles of wood
which are loosely connected into the form of
a thin hollow tube.

3562



pachytrichus

Pilocereus Sina
C. Sina Schott

Cereus Schottii E. (C. Sina Schott)
caulibus elatioribus (8-10 pedalibus) fasciculatis,
articulatis flavo viridibus ~~[illegible]~~ sub 5 (4-7) costatis;
areolis (in caulibus junioribus sterilibus) (inferioribus) aculeos ~~sub~~ ~~(4-6)~~
robustos breves, sub 5 (4-6) cinereos obscuros
radiales singulumque centralem ~~robustis~~ breviorem
~~omnes robustos~~ ~~brevi[illegible]~~ ~~[illegible]~~ demum ~~dejectos~~ decidos; areolis in articulis superioribus
floriferis confertis cana cinerescenti ~~approximatis~~ et ~~sub 6~~ aculeos
setiformes angulosas flexuosos 15-25 (2-4) pollicares
e rubello cinereos
~~deflexis~~ dependentes s. pendulos gerentibus; floribus
intra ~~setarum~~ aculeorum barbam ~~pene~~
occultis, ~~albidis~~ carneis; tubo gracili supra ovarium globosum
10 squamatum ~~tubo~~ ~~contracto~~ constricto recurvato, ~~gracili~~
sepalis superioribus 10-12 lanceolatis, ~~et~~ petalis
totidem oblongis obtusiusculis;
tubo (ima basi intus) nudo; stigmatibus
5-6 fasciculatis; bacca
parva, globosa, squamosa, pulposa coriacea
floris rudimentis coronata;
seminibus ~~obliquo obovatis~~ carinatis
laevissimis lucidis hilo angusto subventrali.

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